TETRA TECH

# Dredging Windows and Fisheries Studies for LPR OU-2


**Glenn Springs Holdings, Inc.**
A subsidiary of Occidental Petroleum

April 21, 2017

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# Agenda

- Project Overview
- Meeting Objectives
- Dredging Windows in Project Area
- LPR Remedy Implementation and Feasibility of Window Contraction
- Discussion
- Other Study Programs

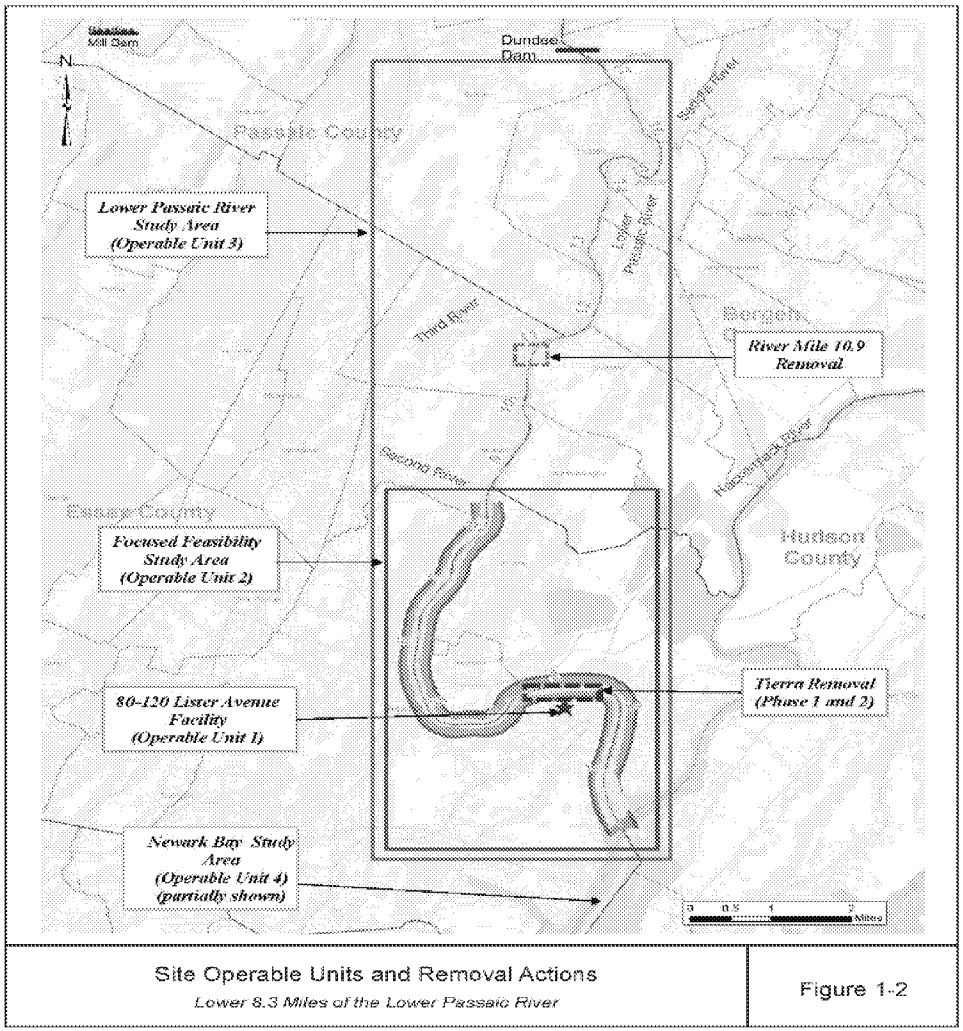
# Meeting Objectives

- Identify dredge window(s) in effect for LPR RM 0 to 8.3
- Identify potential opportunities to modify windows for increased dredge production
- Data collection activities or data needs for modification of windows
- Initial consideration of operational implementation of mitigation measures for fish presence/passage

# Project Overview

- Project represents tidal area of Passaic River RM 0 to RM 8.3
- Multiple contaminants of concern (dioxins, PCBs, DDTx, PAHs, metals)
- Remedy calls for bank to bank removal with capping
- Adaptive management strategy in implementation
- Dredging Windows/River Use have implications for schedule and project dredging production
- Historic navigation channel to 30 ft. MLW not maintained for decades
- Re-establish navigation channel RM 0 to 1.7
- AOC Calls for “Fish Studies”

# Operable Units and Project Area

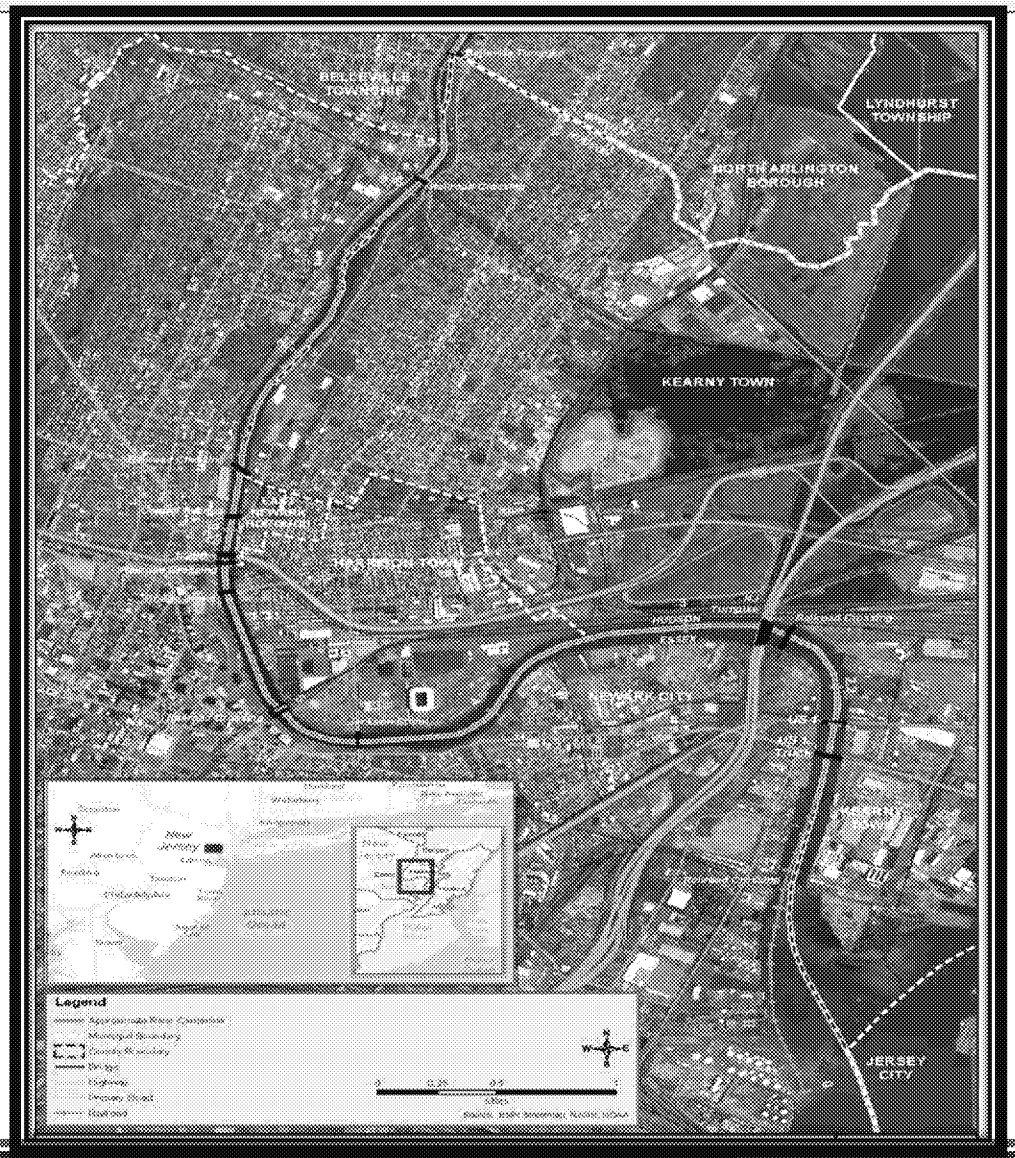



Site Operable Units and Removal Actions

*Lower 8.3 Miles of the Lower Passaic River*

Figure 1-2

# Operable Units and Project Area



# Essential Fish Habitat – EFH Mapper

- Winter Flounder – Eggs*, Larvae*, Juveniles, Adults
- Window Pane Flounder - Eggs, Larvae, Juveniles, Adults
- Red Hake – Juveniles, Adults
- RM 0 to ~1.0

*Deemed most vulnerable to dredging impacts

# Essential Fish Habitat – EFH Mapper

- Summer Flounder – Larvae, Juvenile and Adult
  - RM 0 to RM 8.3 +
- Anadromous Finfish also identified for passage to upstream areas

# Understanding of Existing Fisheries Data for EFH Species

- No current ichthyoplankton data for LPR regarding spawning activity for winter flounder
- Winter Flounder – Only three captured during 2009-2010 surveys from RM 0-4 (0.01% total catch) though not a "targeted species"
- Summer Flounder and Spotted Hake – One fish captured during 2009-2010 surveys in RM 0-2, no Red Hake captured
- AK/NB* area not significant spawning habitat for winter flounder based on HDP surveys

*Includes LPR area

# Understanding of Existing Fisheries Data for Anadromous Finfish Species

- Blueback Herring, Alewife and Striped Bass collected in LPR during 2009-2010 surveys via gill netting
- HDP finfish survey identified Blueback Herring and Alewife in the bay at the mouth of the LPR to be abundant Spring and Fall
- American shad was also identified to be present but less abundant than herring and alewives
- Spawning status in project area unknown but not likely as these species ascend rivers to spawn in freshwater portions – are pass through species in project area

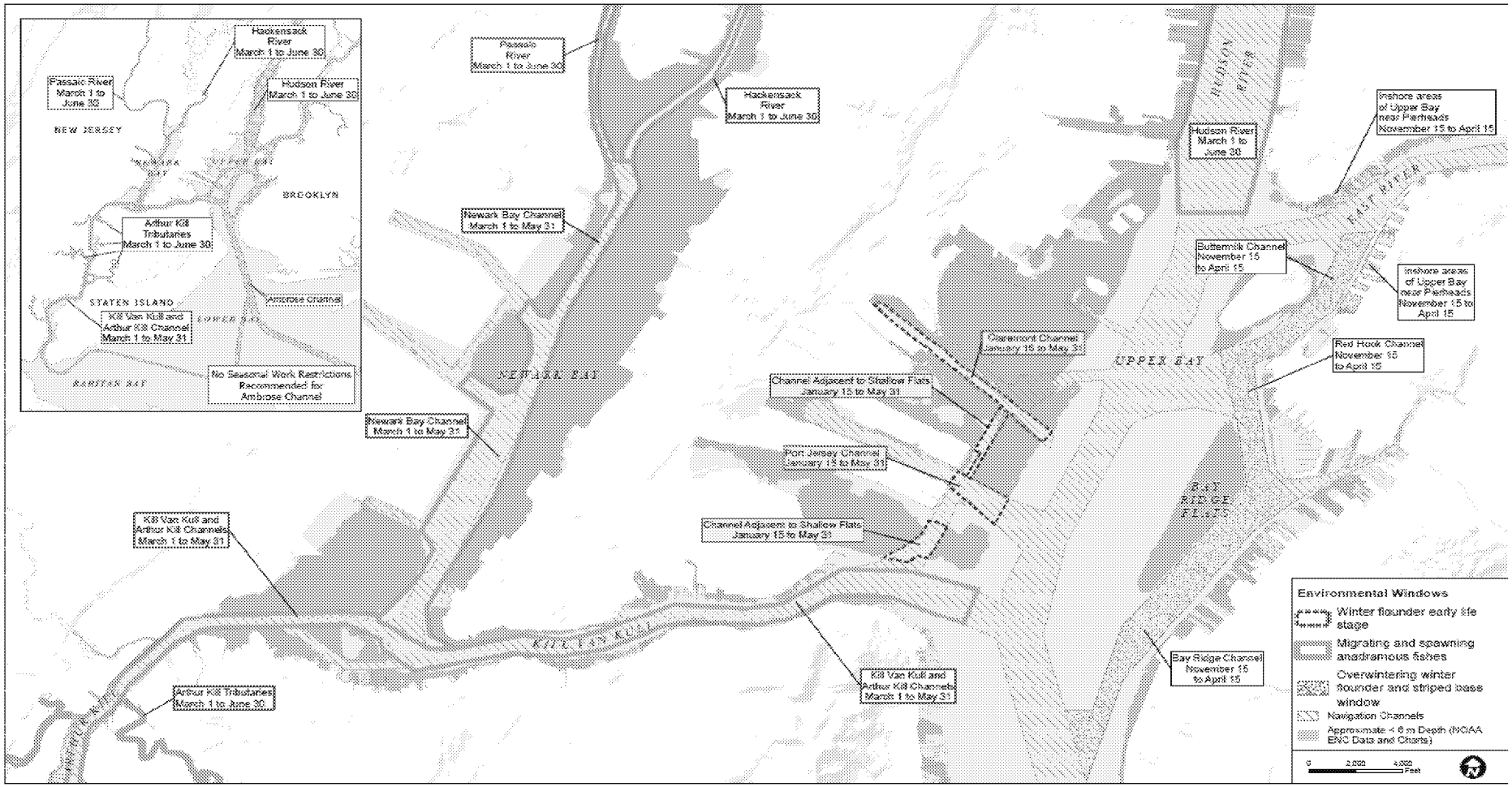
# Dredging Windows – Understanding Existing Windows Applicable to LPR

- Driven by specific species and life stage vulnerability
  - Eggs/Larvae
  - Spawning adults
  - Juvenile/Adult Stages
  - Nursery Areas
  - Historically, broad closure periods over specific depths within NY/NJ harbor complex
    - Febuary 1st thru May 31st NOAA Winter Flounder Window
    - January thru May 31st NJDEP Winter Flounder Window
    - Anadromous finfish windows

# ACOE NY/NJ Harbor Deepening Project (HDP) – Winter Flounder

- Extensive sampling for winter flounder eggs, larvae, juveniles and adults
- Deep water habitats for future maintenance dredging of channels
- Finfish surveys conducted in open water habitats for anadromous finfish
- AK/NB area not identified as significant spawning habitat for winter flounder
- LPR not sampled but limited data below mouth of LPR with bay confirm low numbers
- EFH applies to water depths <6 m (20 ft)

# Navigational Channel Fish Window Modifications - HDP




U.S. Army Corps of Engineers - New York District
Harbor Deepening Project and its Operation and Maintenance
New York/New Jersey Harbor

*Final NOAA EFH Conservation Recommendations*
*January 23, 2017*

# Adjusted Dredging Windows for Navigation Channels – NY/NJ Harbor

Newark Bay:

- Avoid dredging from March 1 to May 31 of each year in the main channel of Newark Bay to minimize impacts to migrating and spawning anadromous fishes which are prey species for federally managed bluefish, summer flounder, windowpane and skates. This seasonal restriction is not needed in the South Elizabeth Channel and the inner portions of the Port Newark and Elizabeth Channels.

Passaic River, Hackensack River, Hudson River above Upper Bay and tributaries to the Arthur Kill:

- Avoid dredging from March 1 to June 30 of each year to minimize impacts to migrating and spawning anadromous fishes which are prey species for federally managed bluefish, summer flounder, windowpane and skates

# Implications of Combined Windows

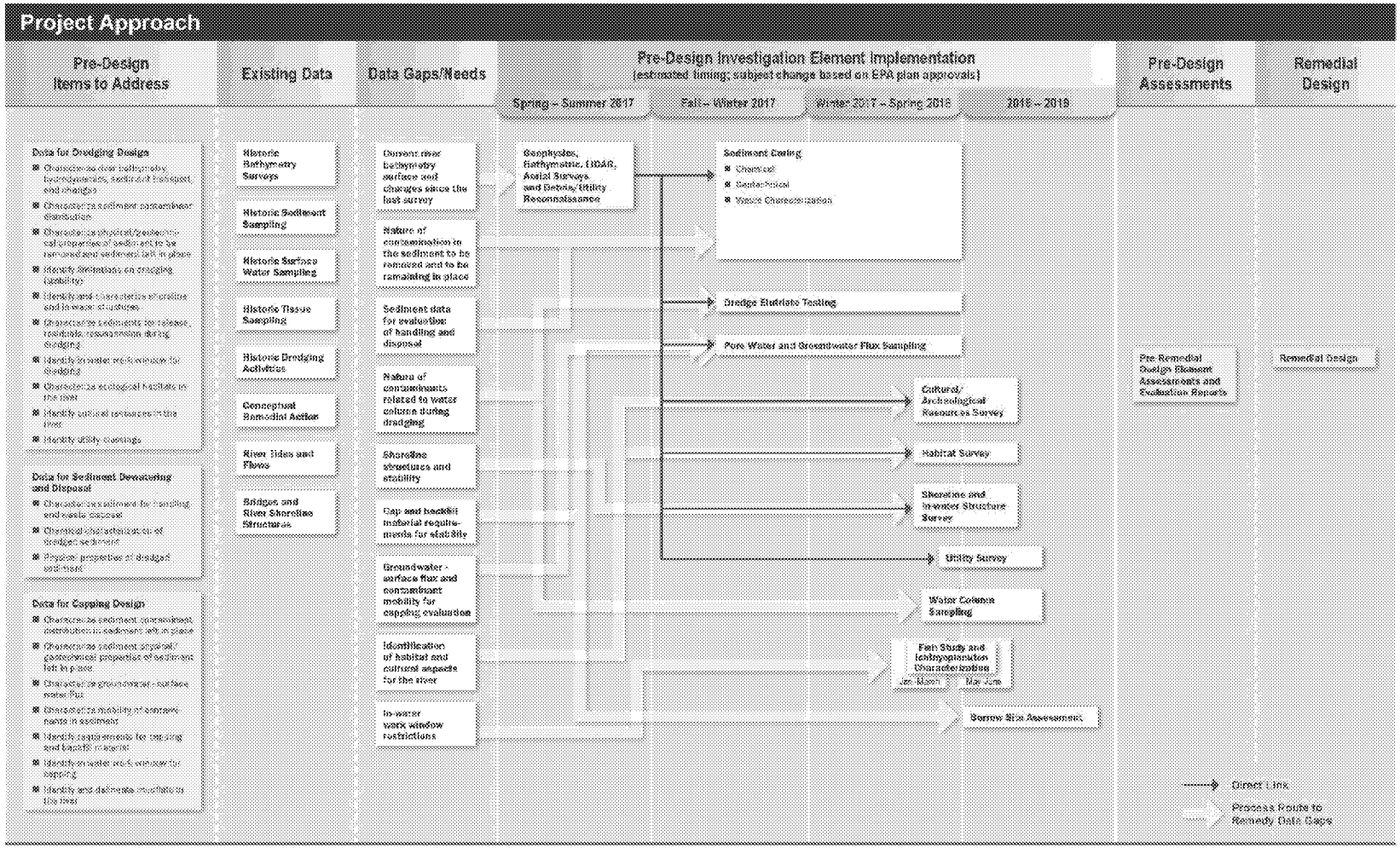
- January 15th – May 31st winter flounder (spawning adults, eggs and larvae)
- March 1st – June 30th Anadromous finfish (river herring/Am. Shad) passage – applies to channels for navigation
- 6 month potential closure window ?
- River mile 10.9 limited removal action closure period ended June 30th, dredging began post June 30

# Can Fish Windows be Modified for LPR Project?

- Can dredging area limits or schedule modifications in dredging area to permit fish passage be applied
- Confirmation of insignificant spawning in LPR by Winter Flounder
  - Epibenthic sled surveys
  - Adult/juvenile trawl surveys
- Confirmation of Finfish Presence and Migration
  - Ichthyoplankton surveys
  - Adult/ juvenile finfish trawl surveys

January through June for winter flounder and anadromous finfish

# LPR OU-2 Project Schedule



**Consolidated Meeting Minutes**
**Lower Passaic River - River Mile 0 to 8.3**
**Pre-Design Work Plan Studies**
**Fisheries Studies Related to the Dredge Window for the LPR**
**April 21, 2017, 10 am – 2 pm**
**EPA Edison Facility, 2890 Woodbridge Ave, Edison, NJ,**
**Building 205B, Room 115.**

These meeting minutes provide a brief summary of supplemental discussion and information overview to the presentation given. The meeting agenda, presentation slides, and sign in sheet are provided as attachment to these consolidated meeting minutes.

- Karen Greene (NOAA) recommended using NOAA estuary tables provided on NOAA website in addition to the EFH mapper data presented for additional species data.
- Winter flounder remains the main driver on the windows in shallow water habitat (<6 meter depth).
- Winter flounder windows between NJDEP and NOAA vary slightly with a January 1st through May 31st and the January 15th to May 31st windows with NJDEP F/W often deferring to NOAA recommendations. Also noted was the March 31st to June 30th window for anadromous fish. It was pointed out that an overlapping window does reveal a potential 6 month environmental window for some areas.
- Karen discussed recent developments for the potential of the blue back herring to be listed as a candidate for listing as a threatened/endangered species, which will require consideration in Passaic remedial design planning.
- Karen recommended a focus on evaluating habitat characteristics including depth, salinity, water temperature and bottom substrates for the winter flounder, which could allow for the opportunity for fish window closure adjustment or elimination if no habitat exists.
- NOAA would not let instantaneous data collection modify a fish window immediately, and "more than one year" of data would be needed.
- For anadromous finfish, seasonal variations in temperatures and river characteristics that can change seasonally, and annually, therefore even additional years of data may not result in a significant change or modification to the fish closure window for river herring.
- Karen indicated that sequencing of work areas may be a viable way to work some adjustment of dredging within the fish closure periods, based on location and depth, as was done for the USACE Newark Bay deepening project.
- NOAA and NJDEP indicated that "all in water work' was considered subject to the closure window which would include both dredging and capping.
- USACE and HDR provided references and information which will be shared regarding their own research including data and videos on fish surveys and sampling techniques.